AS–BUILT NARRATIVE

WASTE STORAGE 313: LEDGEVIEW FARM'S

Planning and design of a waste storage structure for Ledgeview Farm's started in 2009. Soil borings were conducted in 6–2009 and soils tested by AECOM. Adequate soil type and depth were found such that a structure could be sited and built to meet current NRCS Standards. In Fall of 2009 Ledgeview Farm's began logging and land grubing the area. Preliminary design and plans were developed and collaborated with NRCS and DATCP. In 2010 Ledgeview Farms began stripping topsoil and had some clean clay (CL) fill hauled into the site from a construction project. Plans and specifications were revised and developed by Brown County LWCD on behalf of Ledgeview Farm's and were submitted and reviewed by DATCP. Plans and Specifications were approved by DATCP in 11/14. Plans were supplied to Ledgeview Farm's which they used to work on the site in varying degrees as they had time and equipment. Brown County assisted them in staking area extent for project location. Plans and specifications were submitted to WDNR 4/2015. Plans were reviewed and met current standards but, a failure analysis was required to complete the review. A failure anaysis response was sent but, more information was requested. The plans were withdrawn until the needed data could be gathered and submitted.

Ledgeview Farms aquired some scrapers for their large tractors and began taking on more earth moving duties between planting and hay harvesting. July 8th, 2015 (b) (6)(b) (6) lost control of a tractor and scraper he was operating and tipped over in the excavation. (b) (6)(b) (6)(b) (6)(b) (6)(b) (6) (b) (6)(b) (6)(b) (6)(b) (6)(b) (6) The (b) (6) family was devistated with such a tragedy and with their connection to the community, hundreds of people shown interest and dozens gathered to help the family farm remain operational while immediate family attended to a more important matter. Several excavation company's and contractors donated heavy equipment and time working with and directing excavation activities for the waste transfer and waste storage facility. The strucutres transfer pipe and filling/grading was completed over a weekend. Several concrete contractors volunteered their time and equipment working with and directing volunteers in building a reception tank and concrete slab for the manure storage facility. These activities happened in just several days and were done by 8/15.

Brown County was contacted and conducted on–site inspections of equipment, materials and methods of excavation for the compaction of transfer pipe and storage facility. Brown County conducted inspection of sub–base foundations, forming, materials and curing for concrete tank and storage slab. Brown County put together an after–the–fact plan showing the transfer system. The structures sat for several months while Ledgeview Farms worked on harvesting crops, new milking parlor project and installing a pump in the reception tank. During this time Brown County developed further information for failure analysis and this was submitted to WDNR in 9/15. The structures clay liner testing was conducted by River Valley Testing and results show it meets NRCS 313 and WCS 300. An As–Built Plan was developed by Brown County documenting construction activities to ensure structures substantially met approved plan and applicable standards required by Brown County Animal Waste Ordinance.

Please refer to inspection plan, attached pages and documents to this plan for As–Built information.

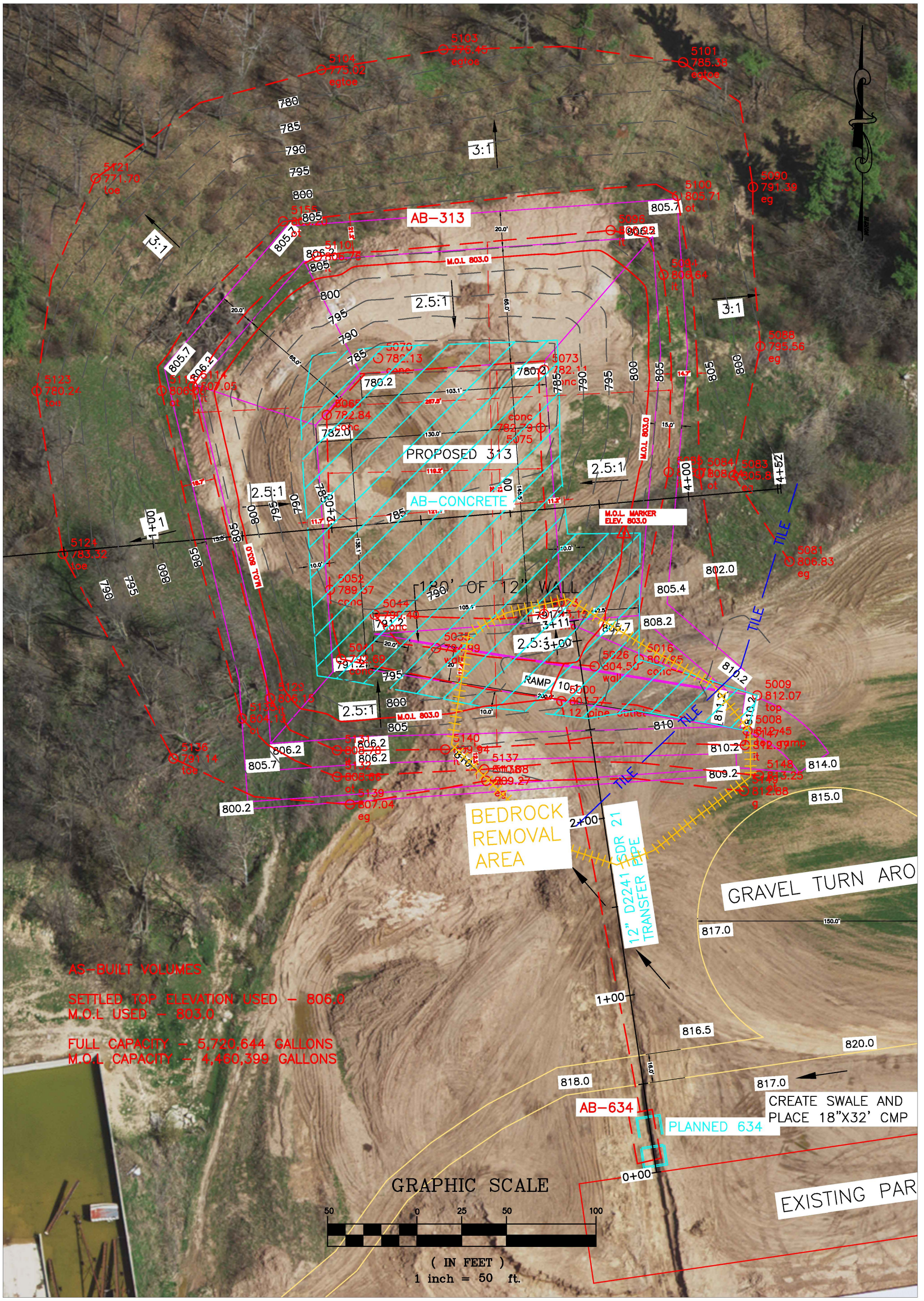
Waste Storage Facility 313 (As–Built):

M.O.L 803.0 – Post installed with sign showing location and elevation of post on side slope is the M.O.L elevation of 803.0
M.O.L Volume – 4,460,399 Gallons
Total Volume – 5,720,644 Gallons
Saftey Volume above M.O.L – 1,260,245 Gallons
As–Built capacity exceeds 180 storage requirement calculated in attached design of 3,696,461 gallons.

Waste Transfer 634 (As–Built):

Two celled concrete tank was a design developed by NRCS and sited by Brown County.
Wet Cell – 12'Wx10'Lx8'D
Dry Cell – 12'Wx16'Lx8'D
Pumped Transfer Pipe – 12" D2241 SDR 21 PVC – 233' (Hydraulic piston pump)
Gravity Drain Transfer Pipe (future parlor waste) 6" D1785 SCH 40 – 233' + routed to parlor in barn by owner and parlor designer. In trench next to 12" pvc.

BCLWCD BROWN COUNTY LAND & WATER CONSERVATION DEPT.	AB–CONSTRUCTION NOTES CLIENT: Ledgeview Farms COUNTY: BROWN	Date Designed Drawn Checked Approved	Drawing Name Date 3/16 Sheet __ of__



Sheet ___ of ___

Date 2016

Drawing Name WI–006

BCLWCD

BROWN COUNTY LAND & WATER CONSERVATION DEPT.

AB–PLAN VIEW

OWNER: LEDGEVIEW FARMS

COUNTY: BROWN

		Date
Designed	DLW	3/16
Drawn		
Checked		
Approved		

AB–313

AB–CONCRETE

PROPOSED 313

180' OF 12" WALL

BEDROCK REMOVAL AREA

12" D2241 PIPE SDR 21 TRANSFER

AB–634

CREATE SWA

PLACE 18"X

PLANNED 6

GRAVEL TUF

EXISTIN

RAMP 10:1

M.O.L MARKER ELEV. 803.0

M.O.L 803.0

TILE

AS–BUILT VOLUMES

SETTLED TOP ELEVATION USED – 806.0
M.O.L USED – 803.0

FULL CAPACITY – 5,720,644 GALLONS
M.O.L CAPACITY – 4,460,399 GALLONS

GRAPHIC SCALE

50 0 25 50 100

(IN FEET)
1 inch = 50 ft.

Sheet __ of __

Date 2016

Drawing Name WI–006

BCLWCD

BROWN COUNTY LAND & WATER CONSERVATION DEPT.

AB–PLAN VIEW

OWNER: LEDGEVIEW FARMS

COUNTY: BROWN

		Date
Designed	DLW	3/16
Drawn		
Checked		
Approved		

AB–313

AB–CONCRETE

BEDROCK REMOVAL AREA

AB–634

M.O.L. MARKER ELEV. 803.0

M.O.L 803.0

TILE

12" SDR 21 PIPE TRANSFER

GRAVEL

PLANNED PLACE 18

EXIST

AS–BUILT VOLUMES

SETTLED TOP ELEVATION USED – 806.0
M.O.L USED – 803.0

FULL CAPACITY – 5,720,644 GALLONS
M.O.L CAPACITY – 4,460,399 GALLONS

GRAPHIC SCALE

50 0 25 50 100

(IN FEET)
1 inch = 50 ft.

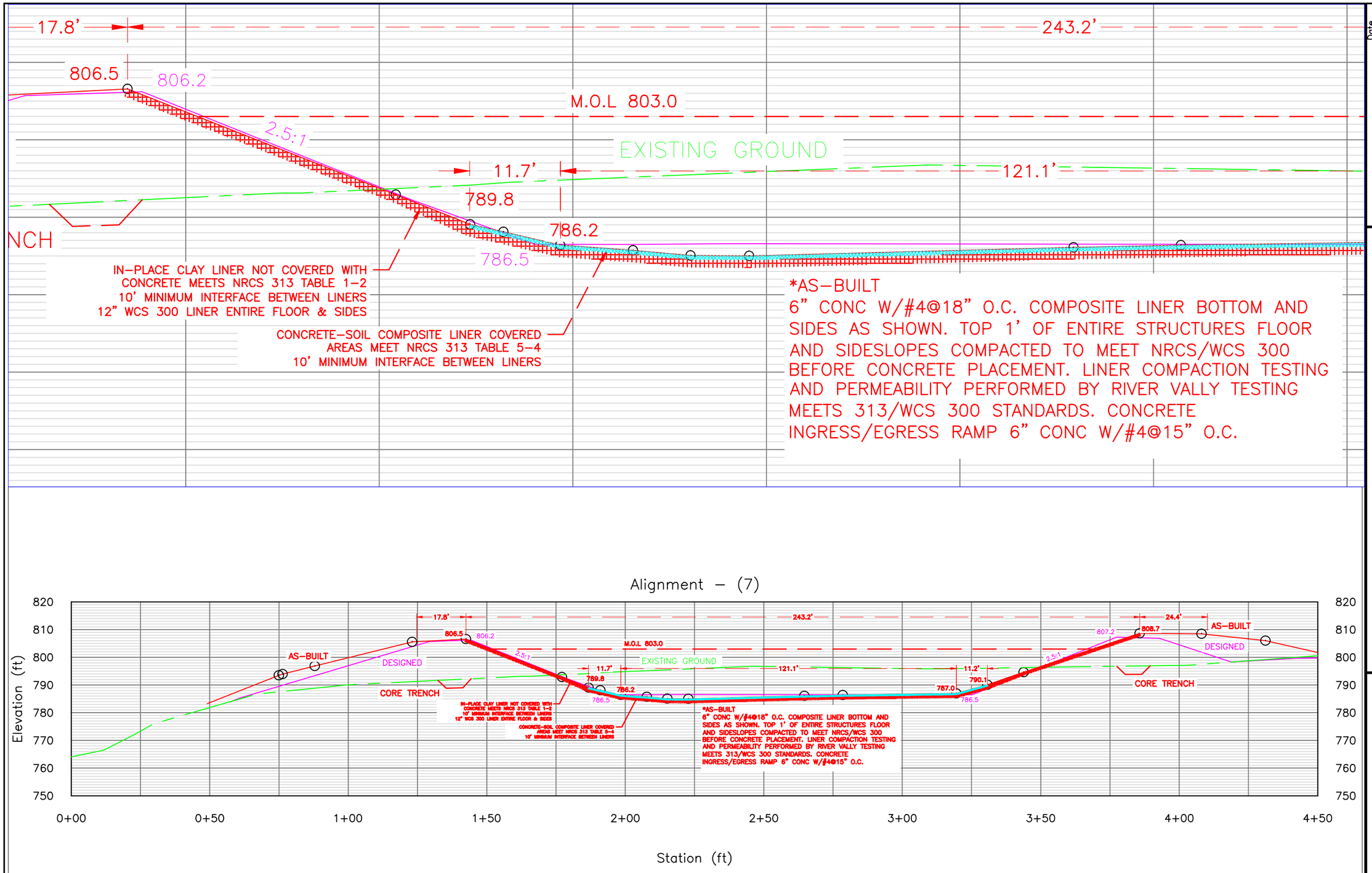
Sheet ___ of ___	Date 2016	Drawing Name WI–006	BCLWCD BROWN COUNTY LAND & WATER CONSERVATION DEPT.

AB–PLAN VIEW

OWNER: LEDGEVIEW FARMS

COUNTY: BROWN

		Date
Designed	DLW	3/16
Drawn		
Checked		
Approved		



Date

Designed

Drawn

Checked

Approved

AB-PROFILE VIEW

OWNER: LEDGEVIEW FARM'S, LLC

COUNTY: BROWN

BCLWCD

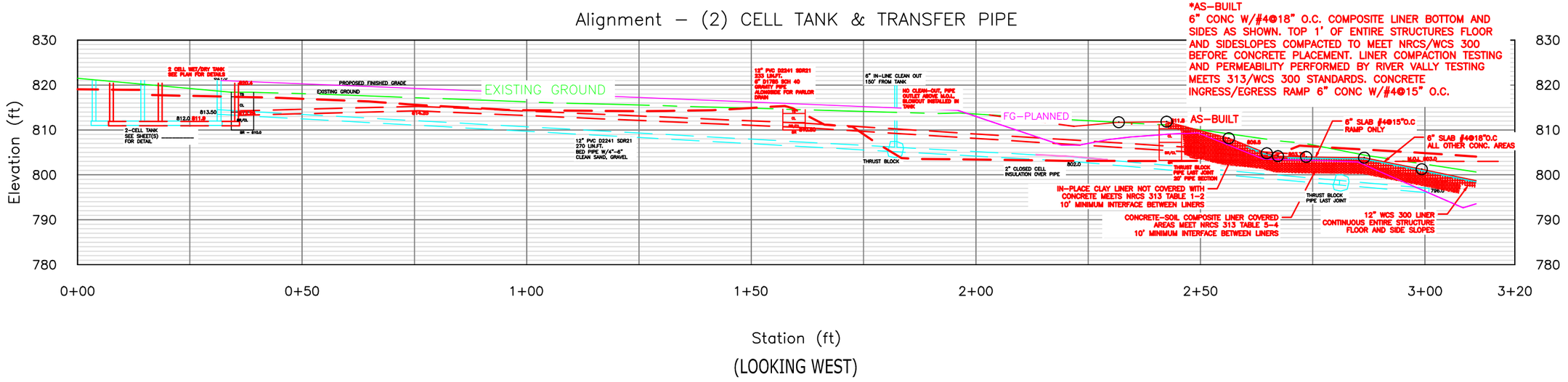
BROWN COUNTY LAND & WATER CONSERVATION DEPT.

Drawing Name

WI-006

Date

Sheet ___ of ___



Date

Designed ____ Date ____

Drawn ____

Checked ____

Approved ____

PROFILE (AS-BUILT)

OWNER: LEDGEVIEW FARM'S, LLC

COUNTY: BROWN

BCLWCD

BROWN COUNTY LAND & WATER CONSERVATION DEPT.

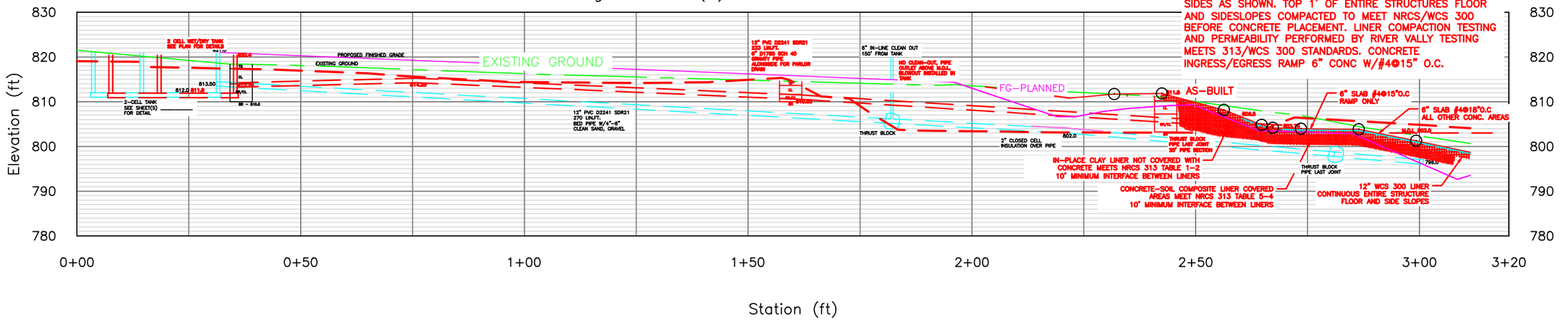
Drawing Name

WI-006

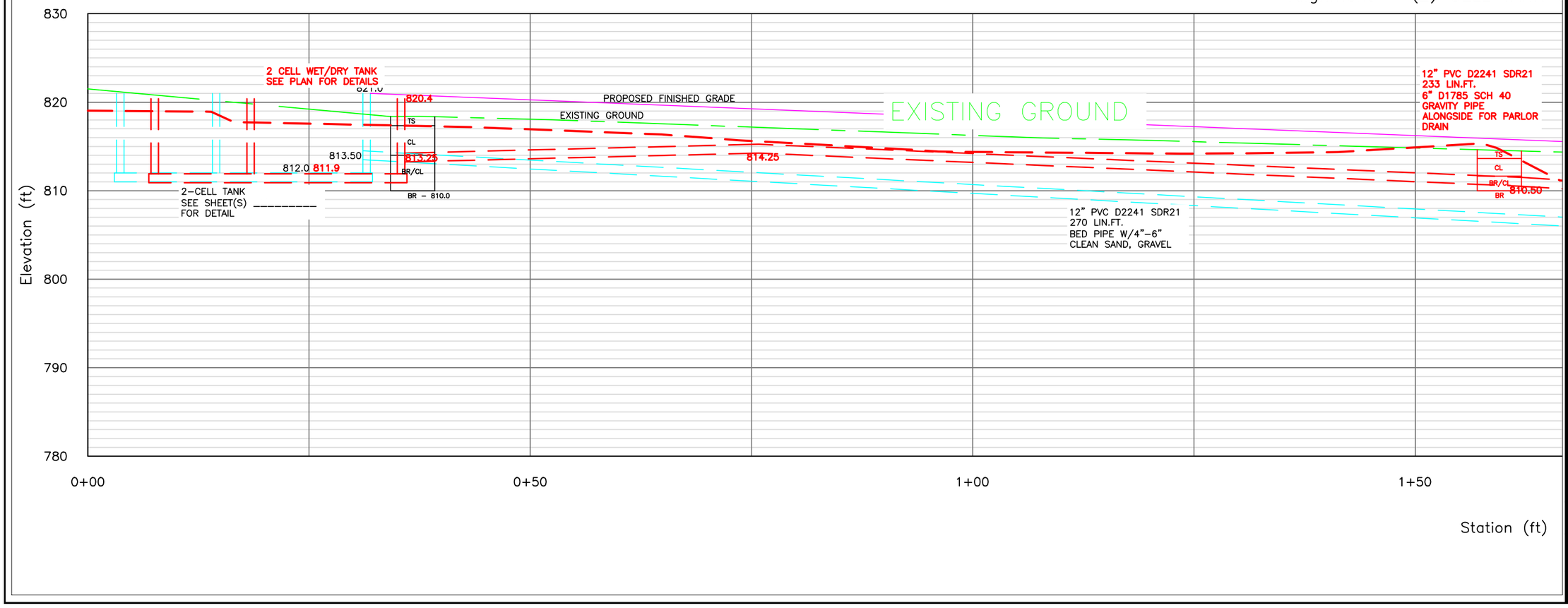
Date

Sheet ___ of ___

Alignment – (2) CELL TANK & TRANSFER PIPE



Alignment – (2) CELL TANK &



Date
Designed
Drawn
Checked
Approved

PROFILE (AS–BUILT)

OWNER: LEDGEVIEW FARM'S, LLC

COUNTY: BROWN

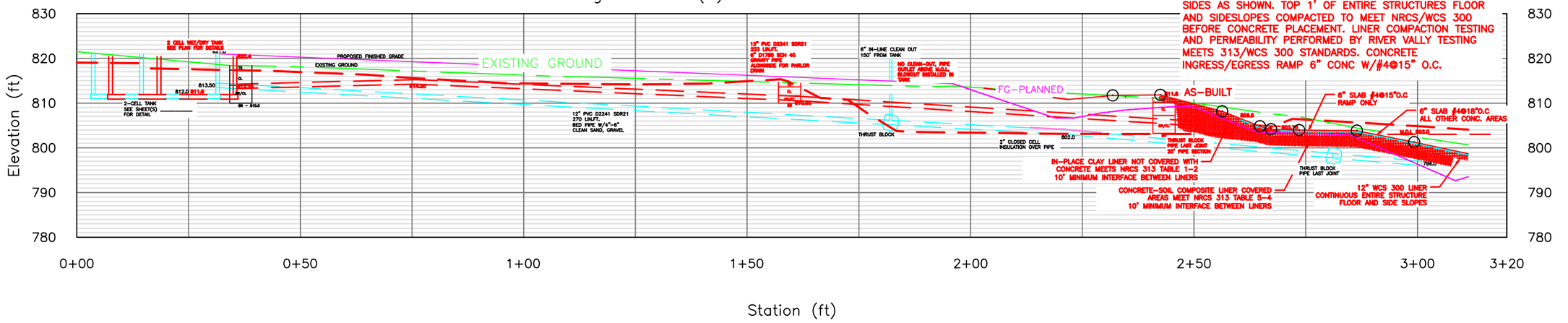
BCLWCD
BROWN COUNTY LAND & WATER CONSERVATION DEPT.

Drawing Name
WI–006

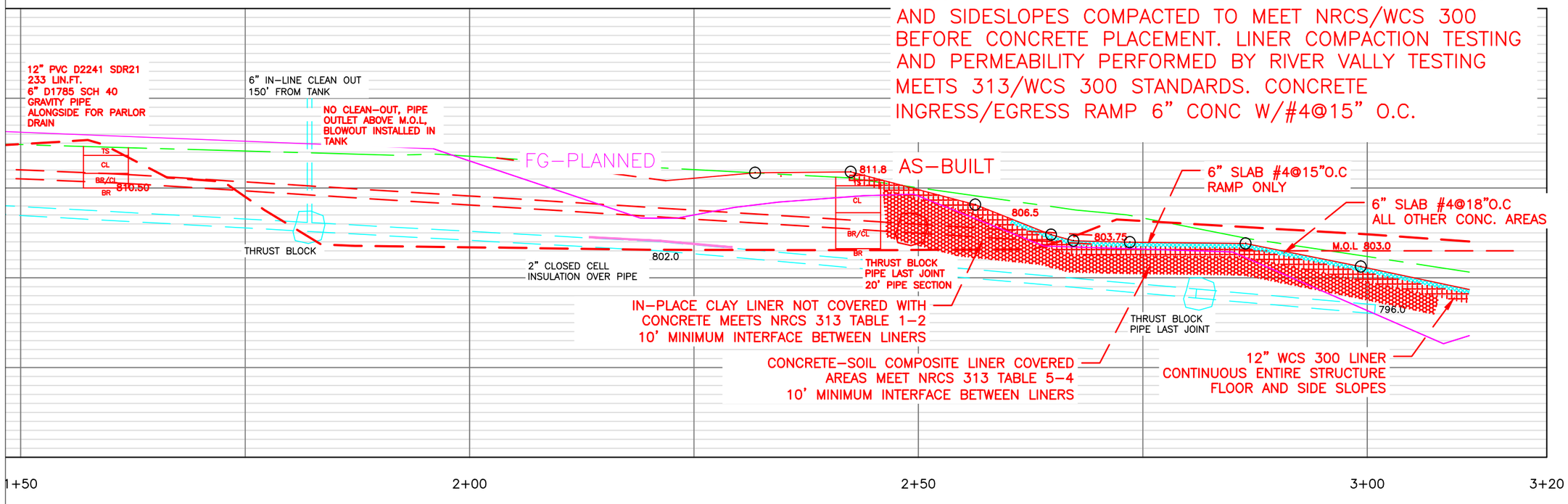
Date

Sheet __ of __

Alignment – (2) CELL TANK & TRANSFER PIPE



(2) CELL TANK & TRANSFER PIPE



Date
Designed
Drawn
Checked
Approved

PROFILE (AS-BUILT)

OWNER: LEDGEVIEW FARM'S, LLC
COUNTY: BROWN

BCLWCD
BROWN COUNTY LAND & WATER CONSERVATION DEPT.

Drawing Name
WI-006

Date

Sheet ___ of ___

Concrete Mixes Reviewed by NE Area Office

UPDATED: 01/28/14

SUPPLIER	MIX #	CEMENT, lbs	FLY ASH, lbs	SLAG, lbs	WATER, gal	W/C RATIO	3/4" STONE, lbs	SAND, lbs
Biehl Redi-Mix	NRCS 2012-1A	423	-	141 (25%)	29.0	0.43	1,800 (57%)	1,370 (43%)
Carew Concrete - Appleton, Green Bay, Oshkosh, New London, Waupun, Horicon, Cooperstown, Portage, Green Lake, Waupaca, Algoma and Fond du Lac Plants	4000680036	395	-	169 (30%)	30.5	0.45	1,835 (58%)	1,309 (42%)
	4010610016	508	56 (10%)	-	30.5	0.45	1,835 (58%)	1,309 (42%)
	4010610036	508	56 (10%)	-	30.5	0.45	1,835 (58%)	1,309 (42%)
	4010610096	508	56 (10%)	-	30.5	0.45	1,835 (58%)	1,309 (42%)
	4025610016	423	141 (25%)	-	30.5	0.45	1,835 (58%)	1,309 (42%)
	4025610036	423	141 (25%)	-	30.5	0.45	1,835 (58%)	1,309 (42%)
	4025610096	423	141 (25%)	-	30.5	0.45	1,835 (58%)	1,309 (42%)
	5010610016	592	66 (10%)	-	33.0	0.42	1,817 (60%)	1,176 (40%)
	5010610036	592	66 (10%)	-	33.0	0.42	1,817 (60%)	1,176 (40%)
	5010610096	592	66 (10%)	-	33.0	0.42	1,817 (60%)	1,176 (40%)
	5025610016	494	164 (25%)	-	33.0	0.42	1,817 (60%)	1,176 (40%)
	5025610036	494	164 (25%)	-	33.0	0.42	1,817 (60%)	1,176 (40%)
	5025610096	494	164 (25%)	-	33.0	0.42	1,817 (60%)	1,176 (40%)
	NRCS-410 (has superplasticizer)	508	56 (10%)	-	30.5	0.45	1,835 (58%)	1,309 (42%)
	NRCS-425 (has superplasticizer)	423	141 (25%)	-	30.5	0.45	1,835 (58%)	1,309 (42%)
	NRCS-4SA (has superplasticizer)	395	113(20%)	56(10%)	30.5	0.45	1,835 (58%)	1,309 (42%)
	NRCS-525 (has superplasticizer)	494	164(25%)	-	34.0	0.43	1,817 (60%)	1,176 (40%)
County Materials Corp.	55NRCS1	564	-	-	30.0	0.45	1,835 (58%)	1,307 (42%)
	55NRCS2	451	113 (20%)	-	30.0	0.45	1,825 (58%)	1,300 (42%)
	NRCS #2 - Hartford Plant	424	140 (25%)	-	30.5	0.45	1,780 (57%)	1,340 (43%)
	NRCS-2 Beaver Dam Plant	424	140 (25%)	-	30.5	0.45	1,770 (56%)	1,400 (44%)
Fels Ready Mix	NRCS	396	56 (10%)	112 (20%)	30.5	0.45	1,830 (55%)	1,490 (45%)
R & J Fricke Inc.	NRCS	455	-	110 (20%)	30.0	0.44	1,860 (55%)	1,500 (45%)
4X Concrete (Oshkosh, Brillion and Greenbush Plants)	#718	396	141 (25%)	28 (5%)	28.0	0.42	1,850 (60%)	1,250 (40%)
Gillett Cement Products	NRCS12	395	141 (25%)	28 (5%)	30.3	0.45	1,778 (57%)	1,336 (43%)
Green & Gold Cement Products	#50	480	84 (15%)	-	23.0	0.4	1,825 (55%)	1,475 (45%)
Harvey Co., Inc.	NRCS-1	564	-	-	30.5	0.45	1,802 (57%)	1,373 (43%)
	NRCS-2	474	90 (16%)	-	30.5	0.45	1,802 (57%)	1,363 (43%)
Lycon, Inc	65656827SCS	400		165 (29%)	30.0	0.44	1,760 (56%)	1,380 (44%)
	95656027	470	100 (18%)		29.0	0.42	1,756 (57%)	1,347 (43%)
	35646007	564			30.0	0.44	1,756 (56%)	1,368 (44%)
Marinette Concrete Products - Marinette Plant	NRCS12	395	141 (25%)	28 (5%)	30.3	0.45	1,740 (56%)	1,343 (44%)
Marinette Concrete Products - Pound Plant	NRCS12	395	141 (25%)	28 (5%)	30.3	0.449	1,740 (56%)	1,342 (44%)
MCC, Inc. - Appleton, Bonduel, Chilton, Crivitz, Depere and New London Plants	#138	564	-	-	30.5	0.45	1,800 (56%)	1,400 (44%)
	#602	423	141 (25%)	-	29.5	0.44	1,800 (57%)	1,380 (43%)
	#4138	400	-	165 (29%)	30.5	0.45	1,800 (56%)	1,390 (44%)
	#4602	394	85 (15%)	85 (15%)	29.5	0.44	1,800 (57%)	1,380 (43%)
Middle Inlet Concrete	NRCS12	395	141 (25%)	28 (5%)	30.3	0.45	1,740 (56%)	1,342 (44%)
Peters Concrete Co.	NRCS	423	141 (25%)	-	30.0	0.44	1,779 (58%)	1,288 (42%)
Premier Concrete	94000 Grade A-S	395	-	170 (30%)	30.6	0.45	1,909 (61%)	1,218 (39%)
	94000 Grade A-S	395	-	170 (30%)	28.5	0.42	1,937 (61%)	1,236 (39%)
	94000 Grade A-S w/ super	395	-	170 (30%)	27.1	0.40	1,956 (61%)	1,248 (39%)
Red-D-Mix Concrete, Inc.	NRC-2	494	70 (12%)	-	30.5	0.45	1,790 (56%)	1,432 (44%)
	NRC-2 w/ Super	494	70 (12%)	-	30.5	0.45	1,790 (56%)	1,432 (44%)

FRED FELS READY MIX
MARIBEL, WI 54227

Project ID / Contractor: Ledgeview Farms
Date: 7-20-15
Plant: on Z
Vehicle No.: #41
Load No.: 2
Cubic Yards: 9 3/4
Bag: 6

ADMIXTURES

Type	Brand	Oz./100 lb. of Cement
Loaded at		
Catexol 260AE	Sika	1 oz
2000 N	Sika	4 oz
Cement 396	Slag 112	Fly 56

WATER ADDED (Gal./C.Y.): At Plant 20 | At Job Site | Actual Total | Allowable Total

MIXING REVOLUTIONS: At Plant 50 | At Job Site | Total

Time [redacted] Started | Inspected by

Time Unloaded | Accepted by

SAND 1532 STONE 1800

	A	B	C	D	E	F	G
1	Concrete Mixture and Materials Information: Wisconsin Job Sheet 813						
2	Project:						634/313
3	Contractor:						Ledgeview Farms
4	Concrete Manufacturer:		Fels Ready Mix	Mix Name:			NRCS
5	Mix Designed By:						Fred Fels
6	Design Mix (Cubic Yard Basis)						
7	Cement [lb]						396
8	Pozzolan Fly Ash [lb]						56
9	Ground Granulated Blast Furnace (GGBF) Slag [lb]						112
10	Measured Air Content [%] (Must be 6± 1.5)						6.0
11	Measured Slump [in] (Must be <6.5)						5.0
12	Measured Slump (After superplasticizer)[in] (Must be <8)						
13	28-Day Compressive Strength [psi] (Must be ≥ 3500 psi)						3500
14	Total Pozzolan + GGBF Material [lb]						168.0
15	Total Cementious Material [lb] (Cement+Pozzolan+GGBF)						564
16	Pozzolan to Total Cementious Material Ratio (Must be ≤ 0.25)						0.10
17	GGBF to Total Cementious Material Ratio (Must be ≤ 0.30)						0.20
18	(Pozzolan+GGBF) to Total Cementious Material Ratio (Must be ≤ 0.30)						0.30
19	Total Cementious Material per yd³ (Cement + Pozzolan + GGBF) (Must be ≥ 558.4)						564
20							
21	Water [gal]						20
22	Fine Aggregate [lb]		1532	Moisture Content [%]			4
23	Water Weight [FA]		61.28	lb.		7.35	gal
24							
25	Coarse Aggregate [lb]		1800	Moisture Content [%]			1
26	Water Weight [CA]		18	lb.		2.16	gal
27	Total Water Content [gal]						29.5059952
28							
29	Oven Dry Fine Aggregate Weight [lb]						1470.72
30	Oven Dry Coarse Aggregate Weight [lb]						1782
31	Total Oven Dry Aggregate Weight [lb]						3252.72
32	Fine Aggregate (Oven dry)/Total Aggregate (Oven Dry) (Must be 0.30-0.45)						0.452
33							
34	Total Water Weight [lb]						246.08
35	Water:Cement Ratio						0.436
36	Materials						
37	Fine Aggregate ASTM C-33			Attach Sieve Analysis			
38	Coarse Aggregate ASTM C-33		Size Number:				
39	Cement ASTM C-150		Type:		Brand Name:		
40	Air Entraining Agent ASTM C-260		Type:		Brand Name:		
41	Fly Ash ASTM C-618		Type:		Brand Name:		
42	GGBF Slab ASTM C-989		Type:		Brand Name:		
43	Water Reducing Admixture ASTM C-494		Type:		Brand Name:		
44	Other Admixtures	ASTM:		Type:		Brand Name:	
45		ASTM:		Type:		Brand Name:	
46							
47	The design concrete mix meets the criteria of the current Wisconsin Construction Specification 4, Concrete. (Date						
48	of Specification 4: ______).						
49							
50							
51	Signature: ______			Title: ______			
52							
53							

Date ____
Designed ____
Drawn ____
Checked ____
Approved ____

AB—PROFILE VIEW

OWNER: LEDGEVIEW FARM'S, LLC
COUNTY: BROWN

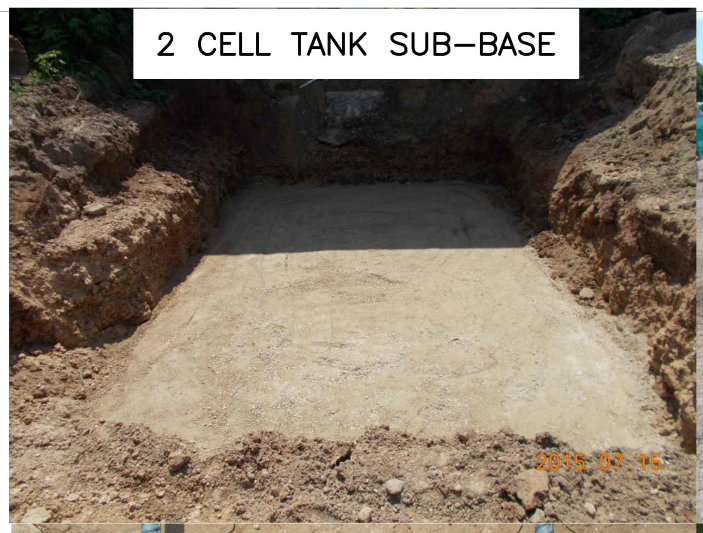
BCLWCD

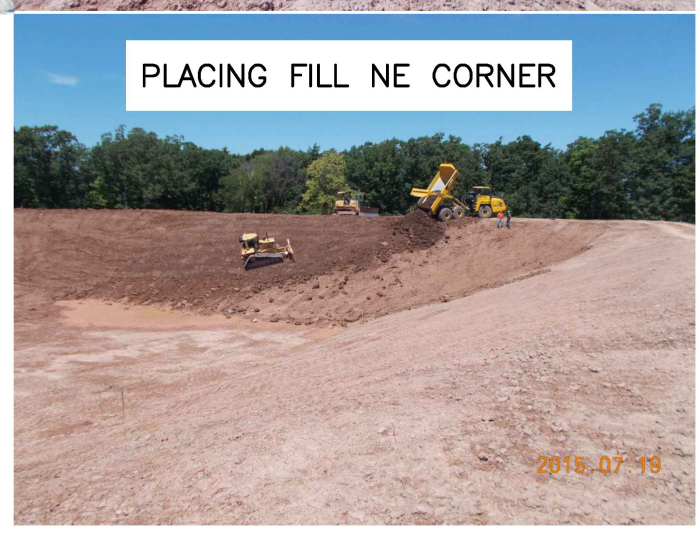
BROWN COUNTY LAND & WATER CONSERVATION DEPT.

Drawing Name
WI—006

Date

Sheet __ of __





RVT
Engineering Resources, Testing Solutions

REPORT OF LABORATORY ANALYSIS OF SOIL

1280 Parkview Road
Green Bay, WI 54304
ph 920-347-9040
fax 920-347-9044
www.rvtcorp.com

Project: **LEDGEVIEW FARMS, LLC**
DE PERE, WISCONSIN

Copies: Mr. Dave Wetenkamp
Brown County LWCD
e)wetenkamp_dl@co.brown.wi.us

Client: Mr. (b) (6)(b) (6)
Ledgeview Farms, LLC
(b) (6)(b) (6)(b) (6)
De Pere, WI 54115

Date: **Revised December 10, 2015

RVT File No: G15-256

GENERAL:

Scope of Work: Perform Percent Material Passing the #200 Sieve, Atterberg Limits, Hydraulic Conductivity and Visual Classification of Soils on the submitted samples.

Date of Test: 11/4/15
Sampled By: I MacMillan of RVT
Soil Description: LEAN CLAY, with Sand, reddish-brown (CL)

**Technician: K Orthober / M Wisneski
Date Delivered: 11/4/15

RESULTS:

Test Method:
ASTM D2487 Classification of Soils for Engineering Purposes
ASTM D1140 Percent Material Finer than the No 200 Sieve
ASTM D4318 Liquid Limit, Plastic Limit, and Plasticity Index of Soils
ASTM D5084 Hydraulic Conductivity Test

Sample Number	3256	Project Specifications
USCS Classification	CL	CL or CH
Percent Passing #200 Sieve (P200)	84	50% Minimum
Liquid Limit (LL)	44	---
Plastic Limit (PL)	18	---
Plasticity Index (PI)	26	12 Minimum
**Hydraulic Conductivity (cm/sec)	2.1×10^{-8}	1×10^{-7} cm/sec Maximum

REMARKS:

The sample above meets project specifications. A portion of the sample will be held for 30 days after the date of this report and then will be discarded unless notified otherwise.

Respectfully Submitted,
River Valley Testing Corp.

501 (1/07) Geotechnical • Construction Materials Testing • Environmental

SEE AB PLAN VIEW FOR TEST LOCATIONS

RVT
Green Bay
1280 Parkview Road
Green Bay, WI 54304
Phone: 920-347-9040 | Fax: 920-347-9044

DENSITY TEST OF COMPACTED FILL

Report Date: 11/5/2015
Test Method: ASTM D 6938

Client:
Ledgeview Farms, LLC
(b) (6)(b) (6)(b) (6)
De Pere, WI 54115

Project:
G15-256
Ledgeview Farms
(b) (6)(b) (6)(b) (6)
De Pere, WI

Test Results

Test #	Retest Of	Test Date	Proctor ID	Method	Soil Classification	Optimum Moisture (%)	Maximum Dry Density (pcf)	In Place Moisture (%)	In Place Dry Density (pcf)	Probe Depth (in)	Percent Compaction	Min Comp. (%)	Remark
1		10/29/15	3256-proctor#1	A	CL	17.5	103.6	18.6	110.2	12	106	95	1S
2		10/29/15	3256-proctor#1	A	CL	17.5	103.6	15.6	103.1	12	100	95	1S
3		10/29/15	3256-proctor#1	A	CL	17.5	103.6	17.3	102.3	12	99	95	1S
4		10/29/15	3256-proctor#1	A	CL	17.5	103.6	18.3	104.5	12	101	95	1S
5		10/29/15	3256-proctor#1	A	CL	17.5	103.6	16.5	107.0	12	103	95	1S
6		10/29/15	3256-proctor#1	A	CL	17.5	103.6	19.7	102.6	12	99	95	1S

Test Information

Test #	Test Location	Elevation	Reference	Gauge Make / Model / SN	Field Technician
1	Pond Liner: GPS Coordinate: 534829.29N 112397.23E	0.0	Liner Surface	Troxler 3440 20649	Macmillan, Isaac
2	Pond Liner: GPS Coordinate: 534852.16N 112319.16E	0.0	Liner Surface	Troxler 3440 20649	Macmillan, Isaac
3	Pond Liner: GPS Coordinate: 534917.15N 112315.34E	0.0	Liner Surface	Troxler 3440 20649	Macmillan, Isaac
4	Pond Liner: GPS Coordinate: 535017.77N 112315.32E	0.0	Liner Surface	Troxler 3440 20649	Macmillan, Isaac
5	Pond Liner: GPS Coordinate: 535046.23N 112390.63E	0.0	Liner Surface	Troxler 3440 20649	Macmillan, Isaac
6	Pond Liner: GPS Coordinate: 534985.13N 112465.96E	0.0	Liner Surface	Troxler 3440 20649	Macmillan, Isaac

Remarks	Comments	Related Tests		
		Test #	Related Test #	Test Type
1S: Test results comply with specifications (Lab ASTM D698)	Tests are "Direct Transmission" (Method A) unless probe depth is noted as "Backscatter". Gauge calibration data on file with the testing agency.			

Sheet ___ of ___
Date 2016
Drawing Name WI–006

BCLWCD
BROWN COUNTY LAND & WATER CONSERVATION DEPT.

AB–PICS/LINER TESTS

OWNER: LEDGEVIEW FARMS
COUNTY: BROWN

Designed DLW Date 2/16
Drawn
Checked
Approved